

REMARKS

Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks. Claims 1 and 2 have been amended in this response. Claims 4, 6, 9-16, 18 and 20 have been withdrawn from consideration by the Examiner. Claims 1-21 remain pending in the present application.

Allowable Subject Matter

Applicants appreciate the Examiner's indication that claims 3, 5, 7, 17, 19 and 21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections Under 35 U.S.C. § 103

Claim 1, 2 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ewert et al. (US Patent No. 6,493,693; hereinafter "Ewert") in view of Nomura et al. (US Patent No. 7,213,664; hereinafter "Nomura") and Spaziente et al. (US Patent Publication No. 2005/0074665; hereinafter "Spaziente"). This rejection is respectfully traversed.

Independent claim 1 is directed to a fuel cell power generation refrigerating system. The system of amended claim 1 comprises:

a vapor-compression refrigerating machine; and
a fuel cell, wherein

driving power of a compression-machine-driving motor of said vapor-compression refrigerating machine is provided by power generated by said fuel cell, and
power generated by said fuel cell is supplied to a commercial system side in response to that total required power of said vapor-compression refrigerating machine is below a power generation capacity of said fuel cell.

Ewert describes a solar powered vapor compression refrigeration system. The refrigeration system includes a photovoltaic panel, a variable speed compressor, an insulated enclosure, and a thermal reservoir. Solar power is converted into stored thermal energy. Ewert further describes that an alternative power source is included and may take the form as a fuel cell. See Abstract of Ewert. Ewert fails to disclose “power generated by said fuel cell is supplied to a commercial system side in response to that total required power of said vapor-compression refrigerating machine is below a power generation capacity of said fuel cell” as recited in claim 1.

Nomura describes a vehicle system, which includes including a fuel cell power generator. The water and heat produced in the fuel cell are recovered. The recovered water is warmed up with the recovered heat, and thereafter stored in the water tank. See Abstract of Nomura. The Examiner states that in Nomura, the excess electric power generated by the fuel cell is stored in the storage battery. However, similar to Ewert, Nomura is not concerned with providing that the “power generated by said fuel cell is supplied to a commercial system side in response to that total required power of said vapor-compression refrigerating machine is below a power generation capacity of said fuel cell” as recited in claim 1.

Spaziante describes a system for storing and transforming energy from sources at variable voltage and frequency. Specifically, the system stores energy in one or more redox batteries independently of the electric characteristics. See Abstract of Spaziante. The Examiner states that Spaziante teaches that the excess power produced by photovoltaic cells is outputted to a distribution grid. However, similar to Ewert and Nomura, Spaziante neither discloses nor suggests “power generated by said fuel cell is supplied to a commercial system side in response to that total required power of said vapor-compression refrigerating machine is below a power generation capacity of said fuel cell” as recited in claim 1.

Independent claim 2 is directed to a fuel cell power generation refrigerating system. The system of amended claim 2 comprises:

- a vapor-compression refrigerating machine;
- a power board supplying operating power to said vapor-compression refrigerating machine using a power supply of a commercial system as an input;
- a fuel cell;
- a first power conversion element performing predetermined power conversion using an output of the fuel cell as an input to supply operating power to a compression-machine-driving motor of said vapor-compression refrigerating machine; and
- a power supply control element providing driving power of said compression-machine-driving motor of said vapor-compression refrigerating machine by power generated by said fuel cell as well as supplying power generated by said fuel cell to said commercial system side in response to that total required power of said vapor-compression refrigerating machine is below a power generation capacity of said fuel cell.

It is demonstrated above that the cited prior art neither discloses nor suggests at least the claimed feature of supplying power generated by the fuel cell to the commercial system side in response to that total required power of the vapor-compression refrigerating machine is below a power generation capacity of the fuel cell. Thus, independent 2 is distinguishable from Ewert, Nomura and Spaziantie for at least the reasons discussed above with respect to claim 1.

Dependent claim 8 is dependent to claim 1 or 2 and thus, it is respectfully submitted that the claim is also patentable for at least its dependency. Claim 8 is also considered patentable because none of the cited references teaches or discloses "the amount of power supply from said commercial system side to a system inside a building including a fuel cell power generation refrigerating system is detected, and power output control of said fuel cell power generation refrigerating system is performed in response to the detected amount of power supply" as recited in claim 8.

In view of the above remarks, it is respectfully submitted that claims 1, 2 and 8 are not unpatentable over Ewert, Nomura and Spaziantie, when taken alone or in combination (assuming they can be combined, which Applicants do not admit). Thus, it is further respectfully submitted that this rejection should be withdrawn.

CONCLUSION

In view of the above remarks, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Dennis Chen Reg. No. 61,767 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,



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